

Authors

C. Thomas Ashley

Office Products Division, Lexington, Kentucky

Mr. Ashley is a project chemist in the printing supplies development group. He joined IBM at Lexington in 1967 to work on the development of photoconductors for office copiers. His present interests include the formulation of inks for jet printing and the interaction of ink with paper. Mr. Ashley received his A.B. degree in mathematics from Transylvania University, Lexington, Kentucky, in 1963, and his M.S. degree in chemistry from Marshall University, Huntington, West Virginia, in 1967. He received an IBM Outstanding Contribution Award in 1975 for his work in the development of ink characterization methods. He is a member of the American Chemical Society.

Bradley L. Beach

Office Products Division, Lexington, Kentucky

Mr. Beach is in a materials engineering group, currently working as an analytical chemist in support of various development projects, including ink jet printers and office product supplies. He joined IBM at the Endicott plant in 1964, where he worked in an analytical process engineering support laboratory. He received a B.S. in chemistry from Rochester Institute of Technology in 1964 and an M.S. in chemistry from Clarkson College of Technology, Potsdam, New York, in 1971. He is a member of the American Chemical Society.

William L. Buehner

Office Products Division, Lexington, Kentucky

Mr. Buehner is a senior engineer and a manager in the advanced ink jet development group. Since 1972 he has been leading a group in the exploration of ink jet technology and development of related products. He joined IBM at Lexington in 1963, working in product testing as a specialist in acoustics. Two years later he was assigned to the development laboratory where he was involved in noise control of office products. In 1968 he took over the management of the electromagnetic compatibility laboratory, and in 1969 he assumed management responsibility for the combined EMC and acoustics laboratories. He received a B.E.E. degree in 1962 and an M.S. degree in engineering physics in 1963 from the University of Louisville. Mr. Buehner is a member of the Institute of Electrical and Electronics Engineers, Sigma Xi, Phi Kappa Phi, and Sigma Pi Sigma. He was the recipient of IBM Outstanding Contribution Awards in 1969 and 1975.

John Michael Carmichael

Office Products Division, Lexington, Kentucky

Mr. Carmichael is a development engineer in production engineering. He currently heads up the production engineering group responsible for the production of the ink jet printer used in the 46/40 Document Printer. He joined IBM at the Lexington laboratory in 1969, where he worked in circuit technology. He later was assigned to the ink jet machine development group. He received an associate degree in electrical engineering from Pennsylvania State University in 1961 and a B.S. in electrical engineering from University of New Mexico in 1969; from 1961 through 1967 he worked for Sandia Corporation in Albuquerque, New Mexico, in the environmental testing laboratory. Mr. Carmichael is a member of the Institute of Electrical and Electronics Engineers and Eta Kappa Nu.

Steven A. Curry

Office Products Division, Lexington, Kentucky

Mr. Curry is a senior associate engineer in an advanced typewriter development group. He joined IBM at the Lexington development laboratory in 1972, and worked in the mechanical analysis department before transferring to his present position in 1975. Mr. Curry received a B.S. in mechanical engineering in 1972 from the University of Kentucky.

Kenneth E. Edds

Office Products Division, Lexington, Kentucky

Mr. Edds is an advisory chemist in the supplies development group, currently working on the development of jet inks. He joined IBM at Lexington in 1957 and later helped develop the composer ribbon and cover-over correction tape for the correcting SELECTRIC®. He received his B.S. degree from Lincoln Memorial University in 1953, and took several courses at the University of Kentucky. Before coming to IBM, Mr. Edds worked for Firestone Tire and Rubber Co. He has received three IBM Outstanding Contribution awards.

Donald L. Elbert

Office Products Division, Lexington, Kentucky

Mr. Elbert is currently manager of the jet printing ink development group in Lexington. He joined IBM in 1962 after receiving a B.S. and an M.S. in chemical engineering from the University of Louisville in 1961 and 1962. Mr. Elbert worked on the development of the Tech III ribbon and managed the development of the correctable film ribbon for which he received a Corporate Recognition Award. In 1971, he transferred to jet printer ink technology and managed the development of the ink for the 46/40 Document Printer.

Gary L. Fillmore

Office Products Division, Boulder, Colorado

Dr. Fillmore is an advisory engineer in a copier technology group. He joined IBM at the Endicott laboratory in 1960 as a technician, where he worked on electrical component reliability. During an educational leave of absence he received a B.S. in 1964, an M.S. in 1966, and a Ph.D. in 1968 in electrical engineering from the Pennsylvania State University. From 1968 to 1972 he worked on coherent optical storage technologies at the Endicott laboratory. He worked on the ink jet printer from 1972 to 1974 and then transferred to his present assignment in Boulder.

Carol W. Hildenbrandt

Office Products Division, Lexington, Kentucky

Mr. Hildenbrandt is a development engineer in the product materials and processes department. He joined IBM at the Lexington laboratory in 1964, where he has worked in support of typewriter, copier, and jet printer projects. He received a B.S. in chemical engineering from the University of Kentucky in 1964.

James D. Hill

Office Products Division, Lexington, Kentucky

Mr. Hill is a development engineer in an electronics product development group. He is currently working on advanced ink jet products. He joined IBM at the Lexington laboratory in 1966, where he worked on composer products. He later helped design a text editing system. He received a B.S. from the University of Florida in 1965, and in 1966 he attended the University of Florida under a Ford Foundation Fellowship program and received an M.S. in electrical engineering. Mr. Hill is a member of Tau Beta Pi and Sigma Tau.

Ho Chong Lee

System Communications Division, Endicott, New York

Dr. Lee is an advisory engineer in the printer technology group in the Endicott laboratory. He has been engaged in the development of printer components since he joined IBM in 1968. He was an Assistant Professor of Mechanical Engineering at Rensselaer Polytechnic Institute, Troy, New York, 1962 to 1968. During this time he was also retained as a consultant to Mechanical Technology, Inc., Latham, New York, and to the General Electric Company, Schenectady, New York. His education includes a B.S. in mechanical engineering from the University of Bridgeport, Connecticut, 1957; an M.S., 1959, and a Ph.D. in mechanical engineering, 1962, both from Rensselaer Polytechnic Institute. He is a member of the American Society of Mechanical Engineers.

Menachem Levanoni

System Products Division, Yorktown Heights, New York

Dr. Levanoni is a staff engineer in an ink jet manufacturing research group. He has been working on problems associated with ink jet nozzles, fluid flow and jet excitation. Dr. Levanoni joined the Research Division in 1971, where he worked on optical guided waves and acoustical surface waves, as well as acousto-optic and acousto-magnetic interactions. He received a B.Sc. in 1960 from the Hebrew University, Jerusalem, Israel, in physics and mathematics. In 1970 he was awarded the Ph.D. degree at the California Institute of Technology in nuclear and solid state magnetism.

Walter T. Pimbley

System Communications Division, Endicott, New York

Dr. Pimbley is a senior physicist in the printer technology group in the Endicott laboratory. He has been engaged in the study of printer components since 1969. Between 1959, when he joined IBM, and 1969, Dr. Pimbley was a member of an advanced technology group, where he considered problems of surface adsorption, ellipsometry, and metal fatigue. For a year and a half before joining IBM, he was an instructor of physics at the Pennsylvania State University. His education includes an A.B. in mathematics and physics from Kent State University in 1952, and an M.S. and a Ph.D. in physics from the Pennsylvania State University in 1955 and 1959. He is a member of the American Physical Society.

Harald Portig

Office Products Division, Lexington, Kentucky

Dr. Portig is a development engineer and manager of the mechanical analysis department, a group which uses instrumentation and mathematical techniques to understand and improve the operation of mechanical systems. He joined IBM in 1969 as a staff engineer in the same department. He received a B.S. in 1964, an M.S. in 1966, and a Ph.D. in 1969 from the University of Texas in Austin, all degrees being in mechanical engineering. Dr. Portig is a member of the American Society of Mechanical Engineers, Phi Eta Sigma, Pi Tau Sigma, Tau Beta Pi, and Phi Kappa Phi.

William H. Reed

Office Products Division, Lexington, Kentucky

Mr. Reed is a technical assistant to the director of engineering. He was formerly a project engineer in a materials engineering service group and later managed the Lexington metals engineering department. He joined IBM at the Lexington development laboratory in 1970, where he has worked on material selection and failure analysis for advanced printer and electrostatic copy programs. He received a B.S. in metallurgical engineering from the University of Tennessee in 1970 and an M.S. in the same subject from the University of Kentucky in 1972. Mr. Reed is a member of the American Society for Metals, Tau Beta Pi, Sigma Xi, Phi Kappa Phi, and Alpha Sigma Mu.

Thomas G. Twardeck

Office Products Division, Lexington, Kentucky

Dr. Twardeck is a development engineer in the electronic products area where he works in the development of electrostatic ink jets printers. He joined IBM in 1974 at Lexington. From 1968 to 1970 he served with the U.S. Army at the NASA Electronics Research Center, Cambridge, Massachusetts, and was involved with plasma diagnostic techniques. From 1970 to 1974 he was engaged in the design of submerged-arc furnaces with the Ferroalloys Division of Union Carbide Corporation, Niagara Falls, New York. He received the B.S. degree in electrical engineering from The Citadel, Charleston, SC, in 1964 and the M.S. and Ph.D. degrees in electrical engineering from the Pennsylvania State University in 1965 and 1968.

Thomas H. Williams

Office Products Division, Lexington, Kentucky

Mr. Williams is area manager in LSI support/scientific computation. His area is responsible for technology and design automation support for the division and to provide scientific programming and systems support for Lexington engineering. He joined IBM at the Lexington laboratory in 1963 where he worked on logic and systems design on minicomputers for accounting machines and word processing applications. He later worked in advanced printer technology and became a project manager for the ink jet printer development. He received a B.S. from the University of Kentucky in 1961 and an M.S. from the same school in 1968; both degrees were in electrical engineering. Mr. Williams is a member of the Institute of Electrical and Electronics Engineers, Tau Beta Pi, and Eta Kappa Nu. He holds eight U.S. patents.

Donald L. West

Office Products Division, Lexington, Kentucky

Mr. West is a staff engineer in the advanced ink jet technology group. Currently he is involved in electro-optical sensing systems problems. He joined IBM at the Thomas J. Watson Research Center at Yorktown Heights, NY, in 1961 and worked as an instrument designer until moving to Lexington in 1963. Mr. West has been involved in nonimpact printer development since 1964. He studied mathematics at the University of Cincinnati and taught electronics at the Ohio College of Applied Science, also in Cincinnati. He received an IBM Outstanding Contribution Award in 1975.

Joe W. Woods

Office Products Division, Lexington, Kentucky

Mr. Woods was a senior engineer throughout the development of the ink jet printer. During this phase of the project, he was responsible for the mechanical aspects of the machine and, later, through the release to production phase, he was responsible for the total ink jet printer project. He joined IBM at the Lexington development laboratory in 1964, where he worked in the mechanical products development area. He has been involved in the development of the magnetic card SELECTRIC® typewriter and the selective ribbon feed mechanism for the SELECTRIC® II. He received a B.S. and an M.S. in mechanical engineering from Purdue University in 1963 and 1964. Mr. Woods is a member of Pi Tau Sigma and Tau Beta Pi.